

## **Remarks for the "Response to Non-Final Office Action dated 11/16/2006"**

**[0002]** Applicant respectfully requests reconsideration and allowance of all of the claims of the application. Claims 1-28, 34-42, and 45-50 are presently pending. Claims amended herein are 1, 13, 34, 40, and 45. Claims withdrawn or cancelled herein are 29-33, 43, and 44. New claims added herein are 46-50.

### **Summary of Interviews**

**[0003]** Examiner Stevens graciously talked with me—the undersigned attorney for the Applicant—on December 18<sup>th</sup> and 21<sup>st</sup> of 2006. Applicant great appreciates the Examiner's willingness to talk. Such willingness is invaluable to both of us in our common goal of an expedited prosecution of this patent application.

**[0004]** The focus of both conversations was the outstanding § 101 rejections of all pending claims. To expedite prosecution, I proposed several claim amendments, which were designed to overcome the § 101 rejections. Unfortunately, we were unable find a proposed amendment that was mutually agreeable. The Examiner indicated that he was unable to continue to entertain additional informal claim amendment proposals. Consequently, this official response includes additional claim amendment proposals (in the form of "new" claims) for the Examiner to consider.

## **Formal Request for an Interview**

**[0005]** If the Office's reply to this communication is anything other than allowance of all pending claims, then Applicant formally requests an interview with the Examiner of this patent application. Applicant asks the Examiner to call and/or email me—the undersigned attorney for the Applicant—so that I can best schedule a date and time for a telephone interview that is most convenient for you.

**[0006]** You might consider calling me between noon and 7pm (Eastern Standard Time) on weekdays—since I am on the west coast. If you don't reach me when you call, then please leave a voicemail and send me an e-mail with an indication of a good day and time to call you back.

## **Claim Amendments and Additions**

**[0007]** Applicant amends claims herein to remove unnecessary text that defined the kernel emulator as software embodied on a tangible medium. This change was suggested by the Examiner during one of telephone conversations. Furthermore, the claims are amended to clarify that kernel emulator is *comprised* of software, rather than merely *being* software.

**[0008]** Furthermore, Applicant includes new claims (46-50). These new claims are largely derived from existing independent claims. They include additional text designed to address the concerns related to the § 101 rejection of the Action. When the Office identifies which language will

satisfy its interpretation of § 101, then Applicant will amend the existing claims in manner consistent with that acceptable way.

### **Claim Objection**

**[0009]** The Office states (Action, p. 2):

2. Claims 29-33 are objected to because of the status of claims is unclear. The status identifier states cancelled while displaying claim language. These claims were not examined on their merits.

Applicant confirms that claims 29-33 are indeed canceled.

### **Substantive Claim Rejections**

#### **Claim Rejections under § 101**

**[0010]** The Office rejects all of the pending claims (1-28, 34-42, and 45-46) under §101 because (Action, p. 2):

4. Claims 1-28,34-42,45 and 46 are rejected under 35 U.S.C. 101 because claims reflect functional language that is directed to an abstract idea with no practical application. Furthermore, the claims are silent to a final result, improvement or solution to which the invention is attempting to solve.

**[0011]** Applicant submits that all the pending claims (1-28, 34-42, and 45-46) are directed towards a practical application with useful, concrete and tangible result. All of the pending claims have a practical

application, namely kernel emulation. Hence, Applicant respectfully requests the Office to withdraw this rejection and allow the claims.

**[0012]** However, to facilitate speedy allowance of claims, Applicant includes new claims (46-50). These new claims are largely derived from existing independent claims. They include additional text designed to address the concerns related to the § 101 rejection of the Action. When the Office identifies which language will satisfy its interpretation of § 101, then Applicant is willing amend the existing claims in manner consistent with that acceptable way.

**[0013]** If the additional claims herein do not sufficiently address the Office's concerns, then Applicant asks the Office to indicate what specifically is missing—in its view—from the rejected claims.

#### § 101 Rejections of Claims 1-28, 34-42, and 45-46

**[0014]** All of the pending claims (claims 1-28, 34-42, and 45-46) stand rejected under 35 U.S.C. § 101 because, in the Office's opinion (p. 2):

"...the claims reflect functional language that is directed to an abstract idea with no practical application. Furthermore, the claims are silent to a final result, improvement or solution to which the invention is attempting to solve".

However, Applicant respectfully disagrees with the Office and submits that claims 1-28, 34-42, and 45-46 fully and completely comply with the § 101 standard for patentable subject matter.

**[0015]** It is established law that an abstract idea, by itself, is considered to be unpatentable subject matter under § 101. See, e.g., AT&T Corp. v. Excel Communications, Inc., 172 F.3d 1352, 1355 (1999)(pointing out that laws of nature, natural phenomena, and abstract ideas have generally been identified by the Supreme Court as unpatentable subject matter). However, if such an idea is taken out of the abstract and employed in a process that achieves a "new and useful end", the ***process is*** patentable subject matter, even if the idea by itself would not be. Id. at 1357. Thus, the relevant inquiry under § 101 becomes -- Is the idea being applied to achieve a useful end? Id. If so, then the § 101 threshold is satisfied. Id.

**[0016]** In AT&T, the invention was designed to operate in a telecommunications system with multiple long-distance service providers. The system contained local exchange carriers ("LECs") and long-distance service (interexchange) carriers ("IXCs"). The LECs provided local telephone service and access to IXCs. Each customer had an LEC for local service and selected an IXC, such as AT&T or Excel, to be its primary long-distance service (interexchange) carrier or PIC. The system involved a three-step process when a caller made a direct-dialed (1+) long-distance telephone call: (1) after the call was transmitted over the LEC's network to a switch, and the LEC identified the caller's PIC, the LEC automatically

routed the call to the facilities used by the caller's PIC; (2) the PIC's facilities carried the call to the LEC serving the call recipient; and (3) the call recipient's LEC delivered the call over its local network to the recipient's telephone.

**[0017]** When a caller made a direct-dialed long-distance telephone call, a switch (which could be a switch in the interexchange network) monitored and recorded data related to the call and generated an "automatic message account" ("AMA") message record. This contemporaneous message record contained fields of information such as the originating and terminating telephone numbers, and the length of time of the call. These message records were then transmitted from the switch to a message accumulation system for processing and billing.

**[0018]** Because the message records were stored in electronic format, they could be transmitted from one computer system to another and reformatted to ease processing of the information. Thus the carrier's AMA message subsequently was translated into the industry-standard "exchange message interface," forwarded to a rating system, and ultimately forwarded to a billing system in which the data resided until processed to generate, typically, "hard copy" bills which were mailed to subscribers.

**[0019]** The invention at issue in this case called for the addition of a data field into a standard message record to indicate whether a call involves a particular PIC (the "PIC indicator"). This PIC indicator could

exist in several forms, such as a code which identified the call recipient's PIC, a flag which showed that the recipient's PIC was or was not a particular IXC, or a flag that identified the recipient's and the caller's PICs as the same IXC. The PIC indicator therefore enabled IXCs to provide differential billing for calls on the basis of the identified PIC.

**[0020]** One of the claims at issue – claim 1-- read as follows:

A method for use in a telecommunications system in which interexchange calls initiated by each subscriber are automatically routed over the facilities of a particular one of a plurality of interexchange carriers associated with that subscriber, said method comprising the steps of:

generating a message record for an interexchange call between an originating subscriber and a terminating subscriber, and including, in said message record, a primary interexchange carrier (PIC) indicator having a value which is a function of whether or not the interexchange carrier associated with said terminating subscriber is a predetermined one of said interexchange carriers.

**[0021]** In looking at the subject matter of this claim and finding the claim to pass muster under 35 U.S.C. § 101, the Court looked to the *specification* and commented as follows:

In this case, Excel argues, correctly, that the PIC indicator value is derived using a simple mathematical principle (p and q). But that is not determinative because AT&T does not claim the Boolean principle as such or attempt to forestall its use in any other application. It is clear from the written description of the '184 patent that AT&T is only claiming a process that uses the Boolean principle in order to determine the value of the PIC indicator. The PIC indicator represents information about the call recipient's PIC, a

useful, non-abstract result that facilitates differential billing of long-distance calls made by an IXC's subscriber. Because the claimed process applies the Boolean principle to produce a useful, concrete, tangible result without pre-empting other uses of the mathematical principle, on its face the claimed process comfortably falls within the scope of § 101.

**[0022]** Here, the Court looked at the specification and found that the environment and use of the PIC indicator – that of providing differential billing – provided a useful, concrete and tangible result. That result, however, was not specifically recited in the claim. Rather, it was described in the specification.

**[0023]** Likewise, in the present case, the specification provides a description of the utility and tangibility of the recited subject matter. Specific sections of the specification are excerpted below to further illustrate this point:

The exemplary kernel emulator, described herein, provides a mechanism with which non-native applications can be run on a native platform transparently. For instance, 32-bit applications can be run on 64-bit platform by using the exemplary kernel emulator.

This mechanism can also be used to plug-in a CPU simulator to broaden the scope. For example, the exemplary kernel emulator enables an application to run on a computer with a Merced processor where the application was written for x86 instruction set.

Using an exemplary implementation of the kernel emulator, the kernel of nearly any platform may be emulated and different CPU instructions can be simulated by plug-in CPU simulators.

Specification at pages 10, line 23 to page 11, line 9.

As described in the above Background section, traditional solution for enabling non-native programs to operate on top of a

native platform is virtual machine (VM). However, kernel emulation is less expensive than VMs. Less expensive in terms resources dedicated to emulation (e.g., resources include processor cycles, memory, overhead, etc.). Moreover, unlike VM emulation, all applications (including both native and non-native) may interoperate ("interop").

In this exemplary kernel emulation, described herein, the non-native applications believe that they are running on an operating system (OS) with their non-native kernel. Instead, their non-native kernel is being emulated. The non-native kernel emulator intercepts kernel calls made by the non-native applications and translates them into native kernel calls.

The exemplary kernel emulator is an emulator of the kernel of a non-native OS. It allows non-native applications to run within a native environment by emulating the non-native kernel of a non-native OS. The hardware is not emulated. Nor are the APIs. Instead, the kernel of the non-native OS is emulated. The emulated kernel translates non-native calls (from the applications and their APIs) into calls that can be interpreted and handled by the native OS. Moreover, the emulated kernel interprets and handles information flowing to the non-native applications from the native OS.

Specification at pages 15, line 21 to page 12, line 10.

**[0024]** Accordingly, in this excerpt as throughout the document, it is evident that the claimed subject matter has a specifically described useful, concrete and tangible result and application.

**[0025]** However, Applicant submits that—unlike the claims AT&T—the claims rejected in the present case actual recite their practical application in the claim. All of the rejected claims explicitly recite “kernel emulation” or “kernel emulating” or the like. Applicant submits that this, even without examining the specification, represents a “useful, concrete and tangible

result" and that such a result is a practical application and not an abstract idea.

**[0026]** In view of the above discussion, Applicant respectfully submits that these claims comply with the patentability requirements of § 101 and that the § 101 rejections should be withdrawn. The Applicant further asserts that these claims are allowable.

**[0027]** If the Office maintains its rejection of these claims, then the Applicant requests some additional guidance as to what is necessary to overcome the rejection.

## **Dependent Claims**

**[0028]** In addition to its own merits, each dependent claim is allowable for the same reasons that its base claim is allowable. Applicant submits that the Office withdraw the rejection of each dependent claim where its base claim is allowable.

## **Conclusion**

**[0029]** All pending claims are in condition for allowance. Applicant respectfully requests reconsideration and prompt issuance of the application. If any issues remain that prevent issuance of this application, the Office is urged to contact the undersigned attorney before issuing a subsequent Action.

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Respectfully Submitted,

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